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0001/032

Docket No. 30980018-2 US (1509-106) PATENT

MAR 27 2007

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	
Inventors: Richard TAYLOR et al.	: Confirmation No. 2149
	:
U.S. Patent Application No. 09/521,663	: Group Art Unit: 2625
	:
Filed: March 8, 2000	: Examiner: King Y. POON
For: PRINTING OF DOCUMENTS FROM A COMPUTER	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: BOARD OF PATENT APPEALS AND INTERFERENCES

SUPPLEMENTAL BRIEF ON APPEAL

Further to the Appeal Brief filed November 15, 2006 and the Notice of Appeal filed September 15, 2006, in connection with the above-identified application on appeal, herewith is Appellants Supplemental Brief on Appeal. The \$500 statutory fee was paid on November 15, 2006.

To the extent necessary, Appellants hereby request any required extension of time under 37 C.F.R. §1.136 and hereby authorize the Commissioner to charge any required fees not otherwise provided for to Deposit Account No. 08-2025.

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571-273-8300

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I. Real Party in Interest

The real party in interest is Hewlett Packard Development Company, L.P., a Texas limited partnership.

II. Related Appeals and Interferences

There are no related appeals and/or interferences.

III. Status of Claims

Claims 1-35, 52-55 and 59 are pending.

Claim 59 is allowed.

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claims.

Claims 36-51, 56-58 and 60-65 have been canceled.

Claims 1-4, 6, 7, 9, 17-24, 26, 28, 35, 54 and 55 are rejected under 35 U.S.C. 102(b) as being anticipated by Gerlach et al. (USP 5,469,532). Claims 5, 8, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach et al. in view of Snipp (USP 5,699,495). Claims 10 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach et al. in view of Motoyama (USP 5,319,748). Claims 11-13, 15, 16, 30, 31, 32, 33, 34, 52 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Motoyama '748 and further in view of Siegel (USP 5,678,133) and Motoyama (EP 0 538 059).

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IV. Status of Amendments

All amendments have been entered.

V. Summary of Claimed Subject Matter

Independent claim 1 is concerned with a method of printing a document from a computer 8 with a printer 9 having a printer processor 4 that is not in the computer 8 (Figures 1 and 3; page 1, lines 4, 9, 10 and 34; page 5, lines 9-15; page 9, lines 15-18). The method comprises generating, in printer driver 2 of computer 8, instruction data sufficient to cause printer 9 to print plural pages of the document (page 5, lines 26-30; page 6 lines 8-11, 19 and 20). The instruction data include instructions required to print a current page and at least one subsequent page (page 6, lines 19 and 20). The resource annotation stage 32 of computer 8 responds to the instruction to derive data required to print the subsequent page(s), and resource information indicative of printer processor resources required by the printer to print at least one of the subsequent pages (page 6, lines 8-11). The instruction data required to print the current page are sent to the printer processor as a resource annotated page description 33 by print spooler 3. The resource annotated page description 33 contains the resource information indicative of printer processor resources required by the printer to print the subsequent page(s) (page 9, lines 14-17). Printer processor resources for printing the current page and at least one subsequent page are scheduled in accordance with the resource information sent together with the instructional data required to print the current page (page 9, lines 18-20). The document with the printer processor resources is printed as scheduled (page 9, line 19).

Independent claim 17 is directed to a printer 9 (Figure 3) that prints a document from instruction data that (1) causes the printer to print plural pages of the document and (2) includes resource information derived from the instruction data (page 5, lines 26-30; page 6,

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lines 8-11, 19 and 20). The resource information is indicative of printer processor resources required by the printer to print at least some of the plural document pages (page 6, lines 8-11). The document has a current page and subsequent pages. The printer 9 has a printer processor (that is, driver) 4 including resource annotation stage 32 (page 9, line 4). In such a situation, driver 4 (1) schedules its resources for printing at least one of the subsequent pages of the document in response to resource information provided together with instruction data required to print the current page of the document (page 9, lines 18-20), and (2) causes printer 9 to print the current and the subsequent pages of the document from the instruction data with the printer processor resources as scheduled (page 9, line 19).

Independent claim 21 defines a computer 8 programmed to provide a document for printing by a printer 9 (Figures 1 and 3; page 1, lines 4, 9, 10 and 34; page 5, 19 lines 9-15; page 9, lines 15-18). The document has current and subsequent pages. The programmed computer 8 is not in the printer 9 and has: (1) a first information processing structure for generating instruction data sufficient to cause the printer to print the document (page description language (PDL) and job control language (JCL); page 5, lines 27, 28), and (2) a second information processing structure for generating resource information derived from the instruction data and indicative of printer resources required by the printer to print at least one of the subsequent pages of the document (page 5, lines 28-30, page 6, lines 19, 20), and (3) an information path for enabling the instruction data and the resource information to be sent from the computer to the printer (derived by resource annotation stage 32 as a resource annotation page description and sent via spooler 3 as a resource annotated page description 33; page 9, lines 14, 15). The information path (including spooler 3) is such that the resource data for the subsequent page is sent together with the instruction data required to print the current page to enable the printer 9 to schedule resources for printing the document in response to the resource information (page 9, lines 23-25).

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Independent claim 35 relates to a computer system (including computer 8 and printer 9; page 5, lines 9-13) having a printer 9 for printing a document from instruction data sufficient to cause the printer to print plural pages of the document together with resource information derived from the instruction data indicative of printer resources required by the printer to print some or all of the plural pages of the document (page 5, lines 28-30, page 6, lines 19, 20). The document includes a current page and subsequent pages. The printer 9 has a printer processor 4 for scheduling its resources for printing the different pages of the document from the instruction data in accordance with the resource information and for printing the document from the instruction data with the printer processor resources as scheduled (page 9, lines 15-20, 23 and 24). A computer (application 1 of computer 8) is programmed to provide a document to be printed by a printer (page 5, lines 24-26). The printer processor 4 is not in the programmed computer. The programmed computer has (1) a first information processing structure (driver 2) for generating instruction data sufficient to cause a printer 9 to print the document (page description language (PDL) and job control language (JCL); page 5, lines 27, 28), (2) a second information processing structure resource for generating resource information derived from the instruction data and indicative of printer resources required by the printer to print at least one of the subsequent pages of the document (page 5, lines 28-30, page 6, lines 19, 20), and (3) an information path (transfer page description 33 and spooler 3; page 9, lines 14, 15) such that the instruction data for the subsequent pages can be sent together with the instruction data required to print the current page to enable the printer 9 to schedule resources for printing the document in response to the resource (page 9, lines 23-25).

Independent claim 52 relates to the combination of a computer 8 and a printer 9 having a processor 4 not included in the computer (Figures 1 and 3, page 1, lines 4, 9, 10 and 34; page 5, lines 9-15; page 9, lines 15-18). The computer 9 supplies to the printer

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processor 4 (1) instruction data (page description language (PDL) and job control language (JCL)) sufficient to cause the printer to print the document (page 5, lines 27, 28) and (2) resource information derived from the instruction data indicative of printer processor resources required by the printer at different document printing stages. The computer 8 supplies to the printer processor 4 the resource information as comments in page description language (PDL) located in page headers (page 6, line 13). The page description language enables the printer processor to learn, in advance of processing instruction data for a document printing stage (page 6, lines 13-15), the printer resources required to process instruction data for that document printing stage. The printer processor schedules its resources for different document printing stages in accordance with the resource information to prevent printer stalls (page 6, lines 24, 25, page 9, lines 18-20), and causes the printer to print the document with the printer resources as scheduled, (page 9, lines 23-25).

Independent claim 54 is concerned with a method of operating a printer 9 with a printer processor 4 to print a document (Figures 1 and 3, page 1, lines 4, 9, 10 and 34; page 5, lines 9-15; page 9, lines 15-18). The method includes supplying to the printer processor (1) instruction data sufficient to cause the printer to print the document (page 5, lines 27, 28) and (2) resource information derived from the instruction data and indicative of printer processor resources required by the printer at different document printing stages. The resource information is supplied as page description language located in page headers (page 6, line 13). The resource information enables the printer to learn, in advance of processing instruction data for a document printing stage, the printer resources required to process instruction data for that document printing stage (page 6, lines 13-15). The printer processor 4 schedules resources of printer 9 for different document printing stages in accordance with the resource information to prevent printer stalls (page 6, lines 24, 25; page

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9, lines 18-20). The printer processor 4 causes the printer 9 to print the document with the printer processor resources as scheduled (page 9, lines 23-25).

Dependent claim 3 requires the instruction data to be annotated with the resource information after the resource information has been generated (page 10, lines 4-6).

Claim 4, which depends on claim 3, requires a common information processing structure to perform the steps of generating the instruction data, generating the resource information, and annotating the instruction data with the resource information. Claim 5 indicates the common information processing structure includes printer driver 2 (page 9, line 9; page 5, lines 27-30).

Claim 6, that also depends on claim 3, requires a first information processing structure to perform the step of generating the instruction data, and a second information processing structure to carry out the steps of generating the resource information and annotating the instruction data with the resource information (page 10, lines 5-11). Claim 7, dependent on claim 6, indicates the second information structure is located in an information path 7 for instruction data from the first information processing structure to the printer 9 (page 7, lines 8-11). Claim 8, dependent on claim 7, requires the second information structure to include print spooler 3 (page 9, line 8). Claim 9, also dependent on claim 7, indicates the second information structure includes a discrete structure that receives the instruction data and derives the instruction data so they are annotated with the resource information (resource annotation stage 32; page 6, lines 8-11).

Claim 10, dependent on claim 3, indicates the annotation is in the form of comments in the page description language and/or job control language (page 6, lines 11-13). Between the steps of (1) sending the instruction data and the resource information from the computer 8 to the printer 9 and (2) scheduling printer processor resources, the comments in the page

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description language and/or job control language are filtered to extract the resource information (page 9, lines 6-10).

Claim 11 indicates the document of claim 10 comprises a first page and further pages in the page description language and requires the resource information to be comments in page headers for the first page and for the further pages (page 6, lines 11-13; page 8, Table 2 refers to comments).

Claim 13 requires the resource information to be provided incrementally in a plurality of page headers (page 6, lines 27-29).

Claim 19 indicates the resource information is provided to the printer of claim 17 as annotation to the page description language and/or job control language (page 9, lines 14, 15). Claim 20 indicates the annotation of claim 19 is provided to the printer in the form of comments in the page description language and/or job control language (page 6, lines 6-17).

Claim 23 indicates the second information processing structure of the computer of claim 21 enables (1) resource information to be annotated to the page description language and/or job control language, and (2) the instruction data to be annotated with the resource information (page 9, lines 14-17; page 6, lines 6-17).

Claims 24-34 are similar in many respects to the previously discussed dependent claims, but claims 24-34 require the features to be in computer 8.

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VI. Grounds of Rejection to be Reviewed on Appeal

- A. Gerlach et al. does not anticipate claims 1-4, 6, 7, 9, 17-24, 26, 28, 35, 54 and 55.
- B. Gerlach et al. and Motoyama '748 do not render either of claims 10 or 29 obvious.
- C. Gerlach et al., Motoyama '748, Siegel and Motoyama (EP) do not render any of claims 11-13, 15, 16, 30, 31, 32, 33, 34, 52 or 53 obvious.
- D. Claims 5, 8, 25 and 27 are patentable over Gerlach in view of Snipp.

VII. Argument

- A. **Gerlach et al. does not anticipate claims 1-4, 6, 7, 9, 17-24, 26, 28, 35, 54 and 55.**

The rejection of claims 1, 6 and 35 incorrectly relies on column 10, line 25-column 11, line 35 of Gerlach et al. for the requirements of claims 1 and 35 for the instruction data required to print a current page to be sent to the printer together with resource information indicative of printer processor resources required by the printer to print at least one subsequent page. The examiner comments that in Gerlach et al. the document file and the resource information must be given to the printer before the printer can start printing. The examiner also states that the Gerlach et al. printer does not need all the file, but inherently must have at least the current page that is to be printed. The examiner's comment does not explain why, in Gerlach et al., the instruction data for a current page must be sent to a printer together with resource information for a subsequent page. The comment fails to consider the possibility of the document file and the resource information being supplied to the printer separately, rather than together. Appellants do not understand how the examiner's comment about the Gerlach et al. printer not needing all of the file and inherently having at least a current page is germane to any of claims 1, 6 or 35.

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The consideration of claims 1, 6 and 35 in the office action fails to take into account the requirement of claim 1 for the printer processor to schedule resources for printing the current page and at least one subsequent page in accordance with the resource information sent together with the instructional data required to print the current page. In addition, no consideration is given in the office action to the claim 6 requirement to annotate the instruction data with the resource information. Based on the foregoing, the anticipation rejection of claims 1, 6 and 35, as well as the claims dependent thereon, that is, claims 2-13, 15 and 16, is wrong.

The rejections of claims 3 and 4 allege that Gerlach et al. at column 10, lines 28-33 and in Figures 3A-3C discloses annotating the instruction data with the resource information. The relied upon portions of Gerlach et al. fail to mention anything about annotating instruction data with resource information. Column 10, lines 28-33 indicates resource assembler 208 examines a document and converts the page description language (PDL) to render primitives lists (RPLs) while determining which resources are required to print the document. Resource assembler 208 gathers the selected resources and places them into host resource store 210 along with the associated RPLs. The examiner fails to explain why such gathering amounts to annotating instruction data with resource information.

The rejection of claim 7 states the first information processing structure is application program 204 of Gerlach et al. However, claim 6, upon which claim 7 depends, indicates the first information processing structure performs a step of generating the instruction data. Application program 204 generates a document description by storing the document using a page description language (PDL) that an assembler in the host computer converts to a set of draw primitives, which are generically called a render primitives list (RPL) that may contain alphanumeric characters, graphic objects or combinations of the two

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and describes the document; see the paragraph bridging columns 9 and 10 and column 11, line 44 of Gerlach et al. Gerlach et al. clearly indicates resource assembler 208 determines which resources are required to print the document; see column 10, lines 30 and 31. Hence, it is improper to refer to application program 204 as a first information processing structure that performs the step of generating instruction data. Consequently, the anticipation rejection of claim 7 is improper.

Apparently, the examiner realized there were problems with his rejection of claim 7 because the office action states claim 7 is obvious as result of Gerlach et al. However, the argument based on obviousness fails to take into consideration the fact that resource assembler 208, not application program 204, generates instruction data.

The rejection of claim 9 relies on column 10, lines 28-33 of Gerlach et al. to disclose instruction data annotated with resource information. As has been previously discussed, the relied on portion of Gerlach et al. fails to disclose such annotation.

The rejection of claims 17-24, 26, 28, 54 and 55 relies on the rejection of claims 1-6, 7 and 9.

However, claims 17-20 are directed to a printer, rather than to a method of printing a document from a computer with a printer. The printer is responsive to instruction data sufficient to cause the printer to print plural pages of the document, wherein the instruction data is together with resource information derived from the instruction data indicative of printer processor resources required by the printer to print at least some of the plural pages of the document. The printer includes a processor that is arranged to schedule its resources in response to resource information provided together with the instruction data required to print the current page of the document. While Gerlach et al. indicates printer 218 includes resource scheduler 216 there is nothing to indicate the Gerlach et al. resource scheduler

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schedules the resources of the printer in response to resource information provided together with the instruction data required to print the current page of the document.

Dependent claims 19 and 20 require the resource information to be provided as annotation to the page description language and/or job control language. As has been previously discussed, Gerlach et al. does not disclose such annotation.

Claim 21 and the claims dependent thereon, that is, claims 22-34, are concerned with a computer programmed to provide a document for printing by a printer. The programmed computer includes an information path such that resource data for a page subsequent to a current page is sent together with instruction data required to print the current page. Gerlach et al. has no disclosure of computer 202 sending to printer 218 resource data for a page subsequent to a current page together with instruction data required to print the current page. Gerlach et al. also fails to disclose the requirement of claim 23 for enabling resource information to be annotated to page description language and/or job control language and annotating the instruction data with the resource information or the requirement of claim 28 for providing instruction data annotated with resource information.

Claim 23 requires the second information processing structure that generates resource information to be located in an information path between a printer and a first information processing structure that generates instruction data sufficient to cause a printer to print a document. Hence, claims 7 and 23 are similar to each other. In the rejection of claim 7, the examiner said application program 204 is a first information processing structure for generating instruction data. Appellants have previously shown why this position is incorrect.

The comment in the second full paragraph on page 5 of the office action implies that claims 54 and 55 are essentially the same as claim 1 and/or claims 2-6, 7 and 9. This

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implication is incorrect because claims 54 and 55 include limitations that are not in any of claims 1-7 and 9 and fail to include some limitations that are not in any of claims 1-7 and 9. In particular, claim 54, upon which claim 55 depends, indicates (1) page description language is located in page headers and (2) a printer processor schedules printer resources for different document printing stages in accordance with resource information to prevent printer stalls. No corresponding limitation is in any of claims 1-7 or 9. Hence, the examiner has not attempted to establish a *prima facie* case of anticipation with regard to claims 54 and 55.

Gerlach et al. discusses headers in connection with the Background of the Invention at column 3, lines 12-17 and in the Detailed Description of the Invention at column 7, lines 39-43. Column 3, lines 12-17 merely indicates that in the prior art the binary data are usually accompanied by a header and trailer instructing a parser how to process the data and that the header/trailer are transmitted as ASCII bytes. Column 7, lines 39-43 indicates a glyph set that does not change includes a header as a table of contents indicating which characters are in the glyph set. Thus, Gerlach et al. fails to disclose page headers including resource information in page description language for enabling a printer to learn, in advance of processing instruction data, wherein the printer resources process instruction data for a document printing stage.

B. The rejection of dependent claims 10 and 29 under 35 USC 103(a) as being unpatentable over Gerlach et al. in view of Motoyama '748 is wrong.

Appellants have previously demonstrated why Gerlach et al. does not disclose all the limitations found in claims 3 and 21, upon which claims 10 and 29 ultimately depend. With regard to claim 10, the examiner admits Gerlach et al. fails to disclose specifying the

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instruction data and resource information in the form of comments. The examiner also admits that the requirement of claim 10 to filter the comments to extract resource information prior to sending the data to the printer is not found in Gerlach et al. The examiner relies on column 2, line 39 Motoyama '748 to disclose the comment feature and says it would have been obvious to one of ordinary skill in the art to use the comments as a means of sending resource information to a printer because the use of the comments would greatly simplify resource information communication.

However, there is nothing in the relied upon portion of Motoyama '748 to warrant the position of the examiner. The relied upon portion of Motoyama '748 would lead one of ordinary skill in the art away from the use of comments because it implies the use of comments is unsatisfactory. In this regard, column 2, lines 34-42 indicates the prior art use of comments to distinguish various resources and page breaks is not very straightforward and requires significant processing. Because of these disadvantages one of ordinary skill in the art would not have relied upon comments to "greatly simplify resource information communication" as alleged at the end of the first full paragraph on page 8 of the office action.

Page 11 of the Office Action includes major misrepresentations about the combination of Gerlach et al. and Motoyama '748. The Examiner asserts a completely artificial position by combining Gerlach et al. and Motoyama '748 by failing to consider what Gerlach et al. is trying to achieve. Gerlach et al. attempts to provide an entirely different paradigm for devices to supply information to printers. This paradigm involves providing to an information store associated with a printer certain "resources." In this regard, Gerlach et al. states at col. 5, lines 54-56 and col. 6, lines 24-58 that "anything that needs to be stored in memory and is used to print a document," with the whole document

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being described in resources in time for pages of the document to be printed. The Examiner argues that it would have been obvious to use resource information in comments as taught in Motoyama '748 because "it would be obvious to use the comments as a means of sending resource information to the printer because it would greatly simplify resource information communication by using a known and proven method of sending resource information ... the user would know the method would work and reliable because the method is widely used by others ... it would ensure the invention of Gerlach et al. to be usable with other system ... it would also save the user of Gerlach et al. a lot of effort in trying to figure out how to send the resource information and allowed the printer that is already on the market to be able to detect the sent resource information." Every single one of these statements is wrong. Motoyama '748 discloses only that comments may be used in PostScript "to distinguish various resources and page breaks." This is not, in any way, a teaching to suggest that anything resembling Gerlach et al.'s "resources" (i.e., stored data forming actual building blocks of pages to be printed) can be provided as comments in PostScript. They can not be, and are not Motoyama '748 indicates that certain additional comments about document structure, not the main body of a document, can be provided in PostScript comments.

Gerlach et al. is trying to send actual "resources," not information about resources, to a printer so that these resources are present at the printer when the page is to be printed. This is a completely different model of printing, requiring of the printer processor simple use of the resources provided for it. It is simply not possible to see how this could sensibly be done by commenting PostScript at all. There is no reason for Gerlach et al. to provide all the information that is being printed as comments to another form of all the information that is being printed. Since Gerlach et al. is interested in providing an entirely different approach, one of ordinary skill would not have modified Gerlach et al. to use the

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conventional approach that Motoyama '748 uses. The "teaching" of Motoyama '748 would not be used to convey Gerlach et al. resource information at all, let alone do it in a way which would make Gerlach et al. more readily usable or usable with prior art printers. Gerlach et al. discloses an alternative way to provide information to a printer, not a way of providing some additional information to a printer about future pages of a document to allow a printer to schedule its tasks in printing the document more effectively.

The combination of Gerlach et al. and Motoyama '748 is a classic case of an examiner casting about to find what he believes to be claimed features of an inventor and combining them through the use of hindsight, without any suggestion in the references for the combination. In fact, the proposed combination is even worse because Motoyama '748 teaches away from appellants' use of comments.

The examiner has admitted that Gerlach et al. does not disclose filtering comments for resource information, but alleges Gerlach et al., at column 10, lines 29-31, discloses filtering page description language data to determine what resources are required. In fact, column 10, lines 29-31 of Gerlach et al. states resource assembler 208 examines the document and converts the page description language (PDL) to render primitive lists (RPLs) while determining which resources are required to print the document. Appellants are unable to understand how this can be considered as "filtering" page description language data.

C. The rejection under 35 USC 103(a) of dependent claims 11-13, 15, 16, 30-34 and independent claim 52, upon which claim 53 depends, based on Gerlach et al., Motoyama '748, Siegel and Motoyama (EP) is wrong.

In this rejection, Motoyama '748 is incorrectly relied upon for the same proposition as advanced in connection with the rejection of claims 10 and 29. Hence, the rejection of

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claims 11-13, 15, 16, 30-34, 52 and 53 is incorrect for the same reasons set forth in connection with the rejection of claims 10 and 29, even though claims 52 and 53 have nothing to do with claims 10 and 29.

The office action fails to consider an important feature of claims 11 and 30, upon which claims 12, 13, 15, 16 and 31-34 respectively depend. Claims 11 and 30 require the resource information to be provided as comments in page headers for the first page and the further pages in the page description language. The office action relies upon Siegel to disclose that "page properties" (in the case of Siegel, information about paper type to be used in printing) are embedded in the page description language (PDL) and Motoyama (EP) to disclose that resource information can be posted at the beginning of each distinct document segment. A document segment in Motoyama (EP) is not a page; instead, in Motoyama (EP) the document is structured hierarchically into segments, and location of resource information in Motoyama (EP) is to organize documents effectively in a hierarchical fashion. The comment in the office action on page 9, third full paragraph, that the resource information can be sent in one header at the beginning of the PDL or the resource information can be sent at the beginning of each distinct document segment is irrelevant to the requirement of claims 11 and 30 for the resource information to be provided in the form of comments in page headers for the first page and the further pages to be in the page description language. Nothing in the prior art suggests the combinations of claims 11 or 30, which enable resource information to be provided to a printer processor in a way that allows effective printing by the printer.

The office action also does not consider the requirement of claim 13 for the resource information to be provided incrementally in a plurality of page headers.

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The office action states the discussion of claims 11-13 is applicable to claim 52. Appellants have demonstrated that the proposed combination of references to reject claim 11 is wrong and that one of ordinary skill in the art would not have relied on Motoyama '748 to use comments in page description language. By the same reasoning, the rejection of claim 52 as being obvious as result of Gerlach in view of the two Motoyama references and Siegel is also incorrect.

D. Claims 4, 7, 24 and 26 are not obvious as a result of Gerlach et al. and Sipp.

This rejection is wrong because Sipp obviously fails to cure the defects in the rejection of claims 4, 7, 24 and 26 upon which claims 5, 8, 25 and 27 respectively depend.

E. Conclusion

The anticipation rejection of claims 1-4, 6, 7, 9, 17-24, 26, 28, and 35 based on Gerlach et al is wrong, inter alia, because the reference fails to disclose the requirement of independent claims 1, 17, and 35 for the instruction data required to print a current page to be sent to a printer together with resource information indicative of processor resources required by the printer to print at least one subsequent page. The anticipation rejection of claims 54 and 55 is wrong because the office action fails to give consideration to many limitations of claim 54 that differ from the limitations of claims 1-4, 6, 7, 9, 17-24, 26, 28 and 35; the office action erroneously implies that the limitations of claim 54 are the same as those of claims 1, 6 and 35. Independent claim 52 is improperly rejected on Gerlach et al, in view of the two Motoyama references and Siegel because, inter alia, the portion of Motoyama '748 relied on by the examiner teaches away from the proposed combination because it implies that the use of comments is undesirable. None of the applied references

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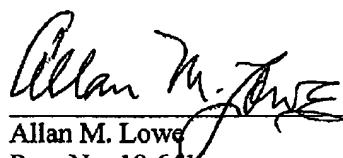
includes the requirement of claims 11 and 30 for the resource information to be provided in the form of comments in page headers for the first page and the further pages in the page description language.

Reversal of the various rejections is in order.

Respectfully submitted,

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March 27, 2007
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Docket No. 30980018-2 US (1509-106) PATENT

VIII. Claims Appendix

1. A method of printing a document from a computer with a printer, the printer having a printer processor that is not in the computer, the method comprising:

generating, in the computer, instruction data sufficient to cause the printer to print plural pages of the document, the instruction data comprising instruction data required to print a current page and at least one subsequent page;

generating, in the computer, by derivation from the instruction data required to print the at least one subsequent page, resource information indicative of printer processor resources required by the printer to print at least one subsequent page;

sending the instruction data required to print the current page to the printer processor together with the resource information indicative of printer processor resources required by the printer to print the at least one subsequent page;

scheduling printer processor resources for printing the current page and at least one subsequent page in accordance with the resource information sent together with the instructional data required to print the current page; and

printing the document with the printer processor resources as scheduled.

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2. A method as claimed in claim 1, wherein the instruction data is provided as at least one of page description language and job control language.

3. A method as claimed in claim 2, wherein the resource information is provided as annotation to at least one of the page description language and job control language, and wherein the method comprises, after the step of generating resource information, the step of annotating the instruction data with the resource information.

4. A method as claimed in claim 3, wherein a common information processing structure carries out the steps of generating the instruction data, generating the resource information, and annotating the instruction data with the resource information.

5. A method as claimed in claim 4, wherein the common information processing structure includes a printer driver.

6. A method as claimed in claim 3, wherein a first information processing structure carries out the step of generating the instruction data, and a second information processing structure carries out the steps of generating the resource information and annotating the instruction data with the resource information.

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7. A method as claimed in claim 6, wherein said second information structure is located in an information path for instruction data from the first information processing structure to the printer.
8. A method as claimed in claim 7, wherein said second information structure includes a print spooler.
9. A method as claimed in claim 7, wherein said second information structure includes a discrete structure receiving the instruction data as input and providing instruction data annotated with the resource information as output.
10. A method as claimed in claim 3, wherein the annotation is in the form of comments in at least one of the page description language and job control language, and wherein the method comprises between the steps of sending the instruction data and the resource information from the computer to the printer and scheduling printer processor resources a further step of filtering the comments in at least one of the page description language and job control language to extract the resource information.
11. A method as claimed in claim 10, wherein the document comprises a first page and further pages and wherein the resource information is provided in the form of comments in page headers for the first page and the further pages in the page description language.

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12. A method as claimed in claim 11, wherein the resource information is in the form of comments in the page header to the first page of the document.

13. A method as claimed in claim 11, wherein the resource information is provided incrementally in a plurality of page headers.

15. A method as claimed in claim 11, wherein no resource information is provided as a comment to the page header of the first page.

16. A method as claimed in claim 15, wherein the step of generating resource information does not include generation of resource information for the first page of the document.

17. A printer adapted to print a document from instruction data sufficient to cause the printer to print plural pages of the document together with resource information derived from the instruction data indicative of printer processor resources required by the printer to print at least some of the plural pages of the document, the document having a current page and subsequent pages, the printer having a printer processor, the printer processor being arranged to

(a) schedule its resources for printing at least one of the subsequent pages of the document in response to resource information provided with instruction data required to print the current page of the document; and

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(b) print the current and the subsequent pages of the document from the instruction data with the printer processor resources as scheduled.

18. A printer as claimed in claim 17, wherein the instruction data is adapted to be provided as at least one of page description language and job control language.

19. A printer as claimed in claim 18, wherein the resource information is adapted to be provided as annotation to at least one of the page description language and job control language.

20. A printer as claimed in claim 19, wherein the annotation is adapted to be provided in the form of comments in at least one of the page description language and job control language, and wherein the printer processor is adapted to filter the comments in at least one of the page description language and job control language to extract the resource information.

21. A computer programmed to provide a document for printing by a printer, the document including current and subsequent pages, the programmed computer not being in the printer and having:

a first information processing structure to generate instruction data sufficient to cause the printer to print the document;

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a second information processing structure to generate resource information derived from the instruction data and indicative of printer resources required by the printer to print at least one of the subsequent pages of the document; and

an information path such that the instruction data and the resource information can be sent from the computer to the printer, the information path being such that the resource data for the at least one subsequent page is sent together with the instruction data required to print the current page to enable the printer to schedule resources for printing the document in response to the resource information.

22. A computer as claimed in claim 21, wherein the first information processing structure is arranged for generating instruction data as at least one of page description language and job control language.

23. A computer as claimed in claim 22, wherein the second information processing structure is arranged for (a) enabling resource information as annotation to at least one of the page description language and job control language, and (b) annotating the instruction data with the resource information.

24. A computer as claimed in claim 23, wherein the first information processing structure and the second information processing structure are combined in a common information processing structure.

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25. A computer as claimed in claim 24, wherein the common information processing structure includes a printer driver.
26. A computer as claimed in claim 23, wherein said second information structure is located in the information path between the first information processing structure and a printer.
27. A computer as claimed in claim 26, wherein said second information structure includes a print spooler.
28. A computer as claimed in claim 26, wherein said second information structure includes a discrete structure for receiving the instruction data as input and for providing instruction data annotated with the resource information as output.
29. A computer as claimed in claim 23, wherein the second information structure is adapted such that the annotation is in the form of comments in at least one of the page description language and job control language.
30. A computer as claimed in claim 29, wherein the document comprises a first page and further pages subsequent in numbering to the first page and wherein the second information structure is adapted such that the resource information is provided as comments in page headers for the page and the further pages in the page description language.

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31. A computer as claimed in claim 30, wherein the second information structure is adapted such that the resource information is provided as comments in the page header to the first page of the document.

33. A computer as claimed in claim 30, wherein the second information structure is adapted such that no resource information is provided as a comment to the page header of the first page.

34. A computer as claimed in claim 33, wherein the second information structure is adapted so as not to generate resource information for the first page of the document.

35. A computer system comprising a printer adapted to print a document from instruction data sufficient to cause the printer to print plural pages of the document with resource information derived from the instruction data indicative of printer resources required by the printer to print at least some of the plural pages of the document, the document including a current page and subsequent pages, the printer having a printer processor, the printer processor being arranged to schedule its resources for printing the different plural pages of the document from the instruction data in accordance with the resource information, and to print the document from the instruction data with the printer processor resources as scheduled; a computer programmed to provide a document for printing by a printer, the printer processor not being in the programmed computer, the programmed computer having a first information processing structure to generate

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instruction data sufficient to cause a printer to print the document and a second information processing structure resource to generate resource information derived from the instruction data and indicative of printer resources required by the printer to print at least one of the subsequent pages of the document, and an information path such that the instruction data for the at least one of the subsequent pages can be sent together with the instruction data required to print the current page to enable the printer to schedule resources for printing the document in response to the resource.

52. In combination, a computer and a printer having a processor not included in the computer, the computer being arranged for supplying to the printer processor (a) instruction data sufficient to cause the printer to print the document and (b) resource information derived from the instruction data indicative of printer processor resources required by the printer at different document printing stages,

the computer being arranged to provide to the printer processor the resource information as comments in page description language located in page headers for enabling the printer processor to learn, in advance of processing instruction data for a document printing stage, the printer resources required to process instruction data for that document printing stage;

the printer processor being arranged to schedule printer processor resources for different document printing stages in accordance with the resource information to prevent printer stalls, and to cause the printer to print the document with the printer resources as scheduled.

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53. The combination as claimed in claim 52, wherein the instruction data includes page description language.

54. A method of operating a printer with a printer processor to print a document comprising

supplying to the printer processor (a) instruction data sufficient to cause the printer to print the document and (b) resource information derived from the instruction data indicative of printer processor resources required by the printer at different document printing stages, the resource information being supplied as page description language located in page headers for enabling the printer to learn, in advance of processing instruction data for a document printing stage, the printer resources required to process instruction data for that document printing stage;

the printer processor scheduling printer resources for different document printing stages in accordance with the resource information to prevent printer stalls, and

the printer processor causing the printer to print the document with the printer processor resources as scheduled.

55. The method as claimed in claim 54, wherein the instruction data includes page description language.

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IX. Evidence Appendix

None.

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X. Related Proceedings Appendix

None.

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